

BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C.

In the Matter of	)	
	)	ET Docket No. 00-258
Amendment of Part 2 of the Commission's Rules	)	
to Allocate Spectrum Below 3 GHz for Mobile	)	
and Fixed Services to Support the Introduction	)	
of New Advanced Wireless Services, including	)	
Third Generation Wireless Systems	)	
	)	
Amendment of Section 2.106 of the	)	ET Docket No. 95-18
Commission's Rules to Allocate Spectrum at 2	)	
GHz for Use By the Mobile-Satellite Service	)	
	)	
The Establishment of Policies and Service	)	
Rules for the Mobile-Satellite Service in the 2	)	IB Docket No. 99-81
GHz Band	)	
	)	
Petition for Rule Making of the Wireless	)	
Information Networks Forum Concerning the	)	RM-9498
Unlicensed Personal Communications Service	)	
	)	
Petition for Rule Making of UTStarcom, Inc.,	)	
Concerning the Unlicensed Personal	)	RM-10024
Communications Service	)	

TO: THE COMMISSION

REPLY COMMENTS  
OF DCT LOS ANGELES, L.L.C  
TO THE FURTHER NOTICE OF PROPOSED RULE MAKING

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### **SUMMARY**

The DCT Los Angeles, L.L.C. ("DCT"), holds two MDS Channel licenses in the Los Angeles, CA area.

DCT strongly opposes relocation of MDS Channel 1 and 2 operations to provide spectrum for advanced wireless services. Nonetheless, in recognition of the National interest and to make its interests known, would support the 1990-2010 MHz band or 1910-1930 MHz band as an acceptable relocation band for MDS Channel 2.

DCT strongly opposes alternatives to those bands for MDS Channel 2 relocation. The 2385-2400 MHz band is especially inappropriate for such relocation, although it would provide an acceptable spectral home for displaced and future isochronous UPCS devices.

Finally, DCT reiterates the public benefits of harmonizing the service rules for MDS Channels 1 and 2 with those for MDS and ITFS operations in the 2500-2690 MHz band by granting MDS Channel 1 and 2 operations flexible use authority.

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ON THE FURTHER NOTICE OF PROPOSED RULE MAKING

DCT Los Angeles, L.L.C. ("DCT"), by and through its attorneys ("DCT"), hereby submits these reply comments in response to the *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking* (the "FNPRM") in the above-referenced proceedings, released on August 20, 2001 (FCC 01-224).<sup>1</sup>

<sup>1</sup> The date for submitting reply comments on the matters raised in the FNPRM was extended to November 8, 2001. *Order Extending Reply Comment Period*, DA 01-2533 (D. Chief, Wireless Tele. Bur.; rel. Oct. 30, 2001).

## I. INTRODUCTION AND BACKGROUND

DCT is the licensee of two MDS channels – the Anaheim MDS Channel 2 station WGX394 and the San Bernardino MDS Channel 2 station WHT573 (collectively the “Stations”). The Stations operate on the 2156-2162 MHz band. Accordingly, DCT is interested in this proceeding insofar as it proposes to relocate MDS Channel 2.

DCT paid fair market value for the Stations. DCT purchased the license for the Anaheim MDS 2 station in 1991 from the original licensee, Broadcast Data Corporation, in a private transaction. DCT acquired the license for the San Bernardino MDS 2 station in March 1993 through a competitive auction held on behalf of The Microband Companies Inc. in the context of a bankruptcy proceeding.

Each of the Stations provides service to portions of the Los Angeles, CA Basic Trading Area (“BTA”). The Anaheim MDS station has in excess of 2,500,000 line-of-site homes within its protected service area (“PSA”). The San Bernardino MDS station has in excess of 590,000 line-of-site homes within its PSA. Thus, the Stations provide line-of-site service to a substantial number of the 14,550,000 persons in the Los Angeles BTA.

Since 1991, DCT, by itself or through an affiliate, has used the Stations in analog mode to deliver regional news programming to cable systems and related entities. Initially, DCT carried Headline News Local Edition, which is produced and distributed, respectively, on behalf of KCAL-TV/Channel 9 and Adlink, a cable advertising interconnect firm, to over 20 greater Los Angeles area cable systems serving over a million subscribers. A second service, Orange County Newschannel (“OCN”), which was started by Freedom Communications and sold to cable MSO Century Communications, was later added and distributed to cable systems with over 550,000 subscribers. At present, the Stations are no longer being used to distribute OCN as another cable

MSO, Adelphia Communications purchased Century and closed down OCN on September 7, 2001. DCT is in the process of developing a new business plan for the Stations, which is very difficult and frustrating during a period of dramatic regulatory for the band.

DCT submitted comments to the Notice of Proposed Rule Making and Order in the above captioned docket.<sup>2</sup> The *Advanced Services NPRM* was of interest to DCT because it proposed to reallocate the upper 1/3<sup>rd</sup> of MDS Channel 2 to advanced wireless services. In its comments, DCT encouraged the Commission not to dismember the top third of MDS Channel 2 to support advanced wireless services because of the destructive effect such action would have on MDS channel 2 directly, and derivatively on MDS channel 1 and on MDS/ITFS-based broadband fixed wireless service. Recognizing that the Commission might not take DCT's advice, DCT proposed what it considered to be the fair alternative of allowing licensees of MDS stations operating in the 2150-2162 MHz band to participate along with the Commission in the 3G auction by auctioning their 2150-2162 MHz frequency assignments. Thereby, these licensees would not be deprived of the fair value they have in their stations. This proposal, along with other proposals for MDS Channel 2, have not been addressed by the Commission. DCT also asked the Commission to accord flexible use to MDS. In response, the Commission accorded flexible use authority to 2500-2690 MHz MDS/ITFS, but made no decision on this matter with respect to 2150-2162 MHz MDS.

The fate of MDS Channel 2 remains in the balance. While DCT reiterates its strong desire that the Commission either (i) not reallocate any part of MDS Channel 2 or (ii) allow a two-sided auction as DCT suggested in its comments to the *Advanced Services NPRM*, DCT sees the prudence in providing the Commission with its views on what spectrum would meet DCT's

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<sup>2</sup> Notice of Proposed Rule Making and Order, FCC 00-455 (rel. Jan 5, 2001) (the "*Advanced Services NPRM*").

needs in the event that the Commission ultimately decides to relocate MDS Channel 2 to other frequencies without adopting DCT's two-sided auction proposal.

As explained in DCT's comments to the *Advanced Services NPRM*, the general interdependence of MDS Channels 1 and 2 counsels that any relocation of one include the relocation of the other to the same band.<sup>3</sup> In reviewing the bands available as new spectral homes for MDS Channels 1 and 2, DCT believes that they can be accommodated in either the 1910-1930 MHz band now available to unlicensed PCS ("UPCS") or the 1990-2005 MHz band recently licensed to the 2 GHz Mobile-satellite Service ("MSS"). Of the other available bands, they are either more suited for 3G services or are unsuited to MDS Channel 1 and 2 operations.<sup>4</sup> The 2385-2400 MHz band is particularly ill-suited as an MDS Channel 1 and 2 relocation band.

## II. THE 1990-2025 MHZ BAND COULD SERVE AS A NEW HOME FOR MDS CHANNELS 1 AND 2

Several commenters to the *FNPRM* have suggested that displaced MDS Channel 1 and 2 operations can be accommodated in the MSS 2 GHz uplink band, between 1990 and 2025 MHz.<sup>5</sup>

DCT has considered that suggestion, and concurs that this band could accommodate those MDS operations.

Of course, the portion of the 2 GHz MSS downlink band reallocated to MDS would have to be reallocated on an exclusive basis, given the far-flung consumer CPE requirements for the reallocated spectrum. While ultimately the decision to make any MSS uplink spectrum available

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<sup>3</sup> MDS Channels 1 and 2 used together create a superband for MDS/ITFS-based fixed broadband system CPE.

<sup>4</sup> DCT's relocation band focus has been restricted to bands identified in this proceeding as available for relocation. DCT believes that other bands can only be considered in the context of another notice of proposed rule making, the issuance of which will protract this proceeding further. A rapid conclusion of this proceeding must be a high priority, as this proceeding causes great uncertainty for bands subject to possible reallocation, resulting in financial harm to licensees and users of those bands and their ability to use those bands in the public interest. Accordingly, a consideration of bands not already identified in this proceeding should be avoided to the maximum extent possible.

for MDS relocation will involve a decision on whether to relocate recently-licensed MSS entities from this band, DCT notes that there is not presently any MSS operations in the band, making it less disruptive to make a portion of this band available to MDS on an exclusive basis. Moreover, DCT observes that that symmetry considerations will in any event result in making a portion of the MSS uplink band available for reallocation if the spectrum subject to review for 3G assignment as indicated in the October 5, 2001 *NTIA Statement* is actually allocated for 3G services.<sup>6</sup>

Comments that address the size and location of the reallocation of MSS uplink spectrum to MDS suggest an allocation to MDS at the upper band edge at 2025 MHz to accommodate MDS Channels 1 and 2.<sup>7</sup> DCT, however, believes that, if MDS is to receive a portion of the MSS uplink band, that portion should be at the lower band edge ending at 1990. DCT's alternative would lessen the adverse impact of this reallocation to MSS licensees. This conclusion assumes that the lower portion of the MSS down link band, between 2165 and 2170 MHz, will be reallocated to 3G services. If that is the case, then allocating the lower portion of the MSS band to MDS will best preserve the spectral separation between MSS up- and downlink frequencies, redounding in lower-cost MSS mobile units.

Concerning the size of the replacement band, some comments suggest an MSS uplink reallocation to MDS of 15 MHz to accommodate MDS Channels 1 and 2.<sup>8</sup> Our engineers, however, believe that a 20 MHz allocation will be required to preserve existing services and

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<sup>5</sup> Comments of Cingular to *FNPRM*, at 11 (filed Oct. 22, 2001) ("Cingular Comments"); Ericsson Comments, at 11; Motorola Comments, at 14.

<sup>6</sup> The *NTIA Statement* states that the 2110-2170 band is subject to study for advanced wireless services. The 2165-2170 MHz portion of this band is allocated to MSS for downlinks. If that 5 MHz is reallocated from MSS, it would seem appropriate to take an equal amount of spectrum from the MSS uplink band at 1990-2025 MHz.

<sup>7</sup> Cingular Comments, at 14.

<sup>8</sup> Cingular Comments, at 14.



potential, because a 15 MHz bandwidth may only accommodate a guard band or guard zone on one end. While we have not developed information indicating the size of the guard band or guard zone that will be required to protect adjacent band MSS uplink operations, we recognize that these operations would be conducted with low power mobile units, and Ad Hoc presumes that they would be significantly susceptible to adjacent band interference.

**III. THE 1910-1930 MHZ BAND ALSO IS  
AN ACCEPTABLE RELOCATION  
BAND FOR MDS CHANNELS 1 AND 2**

**(a) The Band Can Be Made Available to Displaced MDS  
Without Causing Undue Harm to UPCS Interests**

DCT also believes that the 1910-1930 MHz band would serve as a suitable home for displaced MDS Channels 1 and 2. Notably, no domestic 3G advocates favor reallocating this spectrum for 3G, only a limited number of foreign carriers and manufacturers.<sup>9</sup> In reviewing comments filed in this proceeding, we note that some of the manufacturers of isochronous UPCS devices for the 1920-1930 MHz band oppose any reallocation of the band and oppose the displacement of MDS Channels 1 and 2 to this band. These manufacturers request the retention of isochronous UPCS operations in the 1920-1930 MHz portion of this band and, recognizing that the lower portion of the band between 1910-1920 MHz is fallow, they propose allowing manufacturers to sell isochronous UPCS devices operating in this lower band.<sup>10</sup>

Considering the band in those two pieces, DCT finds no equity or public interest in the extension of isochronous UPCS operations into the 1910-1920 MHz band rather than assigning this fallow band to MDS. DCT also believes that the public interest would be better served by reallocating the 1920-1930 MHz band to MDS and gradually removing the isochronous UPCS

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<sup>9</sup> See Section III(d), below.

<sup>10</sup> These manufacturers are Avaya Inc., NEC America, Inc., Nortel Networks Inc. and Motorola.

operations in that band to the 2390-2400 MHz band, with UPCS expansion allowed into the 2385-2390 MHz band.

The comments submitted in this proceeding confirm that the 1910-1920 MHz band is unused and available for reallocation. Rather than see the band go to operations displaced by 3G reallocations, the UPCS equipment manufacturers favor amending the rules concerning access to the 1910-1920 MHz band to allow isochronous operations.<sup>11</sup>

DCT believes such a proposal simply hogs scarce spectrum, needed for the more immediate and important cause of harboring operations displaced by 3G. If there were a surfeit of spectrum below 3G, the UPCS manufacturers's request might be tenable. But there is virtually no fallow spectrum below 3 GHz, and certainly no spectrum not already allocated. Thus, if 3G spectrum is allocated, existing uses of bands below 3 GHz must be moved or retired. In this environment of spectrum scarcity, it makes little sense to allocate spectrum to allow for an expansion of a type of operation, especially when that operation is not subject to spectrum scarcity.<sup>12</sup>

Comments supporting an expansion of the isochronous UPCS band offer no persuasive evidence that an allocation of additional spectrum is required by any demand.<sup>13</sup>

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<sup>11</sup> Motorola Comments, at 20; NEC Comments, at 23-25.

<sup>12</sup> Accordingly, the Commission should (i) eschew Cingular's proposal to allocate this band for TDD, which has no proven need; Cingular Comments, at 12; (ii) eschew UTStarcom's proposal for higher power unlicensed UPCS systems to serve whole communities; UTStarcom Comments, at 4-6; and (iii) eschew Orange's, Siemens and Ericsson's suggestion to expand 3G allocations to include the 1910-1930 MHz band; Orange Comments, at 4; Siemens Comments, at 2 and Ericsson Comments, at 7.

<sup>13</sup> The 10 MHz allocated for this largely "in-building" isochronous service can support so many cordless phones in any one building or campus that it is difficult to imagine more than a handful of instances in which users would be denied cordless phones due to spectrum scarcity. Moreover, claims of a need for additional spectrum cannot be reconciled by statements, such as UPCS proponent Motorola that the "market for isochronous devices is only just beginning to emerge ...." Motorola Comments, at 20. NEC attempts to demonstrate this need by stating that a 1994 reduction in the amount of spectrum allocated to UPCS indicates that UPCS is spectrum-deprived. But the fact of a spectrum reduction in a then-nonexistent service does not necessarily

The isochronous UPCS manufacturing interests decry the unfairness of relocating these systems to make room for displaced MDS Channel 2. But the fact remains that making room for 3G requires the rearrangement of frequency allocations below 3 GHz. It is an inescapable fact that reallocating existing operations to new spectrum inherently involves costs and inconveniences. In short, users of spectrum must suffer. Every harm, cost or inconvenience UPCS interests would suffer by a relocation will be suffered by MDS interests by a relocation. Accordingly, Avaya's exhortations notwithstanding,<sup>14</sup> the fact that a relocation comes with costs cannot be erected as a barrier to relocation or there would never be any relocations.<sup>15</sup> The allocations below 3 GHz would remain static as time and technology made those allocations obsolete. The fact that Congress gave the FCC the broad spectrum allocation powers contained in Section 303(c) of the Communications Act of 1934, as amended, recognizes the dynamic

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support the conclusion that UPCS is now spectrum-starved. NEC continues by suggesting that another 10 MHz would enable "UPCS systems to serve more customers and offer more robust data capabilities." NEC Comments, at 24. But NEC does not point to instances where spectrum starvation prohibits it from serving customers. Rather, NEC says it "faces limitations" serving "certain enterprise facilities ...," *id.*, which falls far short of a compelling need for additional spectrum as a solution to this problem (if that is the appropriate solution) and which is more egregiously short of the burden of need one would find appropriate when there is a spectrum shortage. While we appreciate NEC's desire to better perfect its product, a reallocation of the 2150-2162 MHz band from MDS to 3G will create an immediate and demonstrable need for spectrum for displaced MDS operations which should take precedence over a possible future, undemonstrated and speculative need for new isochronous UPCS spectrum.

<sup>14</sup> Avaya notes that (i) the development of Part 15-compliant UPCS products has come at a high price, (ii) that UPCS product manufacturers have overcome regulatory hurdles, (iii) that manufacturers relied upon the Commission's allocation of spectrum to UPCS, (iv) that UPCS interests must comply with an "onerous, complex and singularly comprehensive set of regulations to deploy systems in the UPCS band," and (v) that it is difficult to sell these complex products to customers. Comments of Avaya Inc. to *FNPRM*, at 2-5 ("Avaya Comments"). By making one change in that sentence – that being changing "UPCS" to "MDS" – that sentence aptly describes the history of challenges the MDS industry has faced. The point is that UPCS's challenging past is no reason to immunize it from reallocation.

<sup>15</sup> NEC complains of (i) stranded investment; NEC Comments, at 14-15; (ii) detrimental reliance in taking the Commission at its word when it allocated spectrum for UPCS; *id.* at 15-16;

nature of communications technologies, needs, markets and capabilities. Section 303(c) does not require the Commission to stay its reallocation power because of cost considerations. Similarly, and contrary to NEC's Section 303(y) argument, there is no statutory restriction that would require the Commission not to reallocate spectrum because to do so would cause interference to existing users.<sup>16</sup>

DCT's recommendations go far to ameliorating any inconvenience and cost relocated 1920-1930 MHz UPCS interest would be asked to shoulder. To this end, DCT supports making the compatible 2390-2400 MHz band a new home for 1920-1930 isochronous UPCS. This band presently is allocated for use by asynchronous UPCS and amateur radio. As the Commission knows and comments in this docket reflect,<sup>17</sup> there has been little (if any) development of asynchronous UPCS devices for 2390-2400 MHz. Allowing this band to be used for isochronous UPCS devices should provide the 1920-1930 MHz interests with a new spectral place of business that will satisfy their needs.<sup>18</sup>

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(iii) manufacturer reticence; *id.* at 18; and (iv) consumers reticence; *id.* at 17-18. Again, reallocated MDS interests are similarly situated, as is any service that faces a reallocation.

<sup>16</sup> NEC Comments, at 4-9. According to NEC, Section 303(y) prohibits the Commission from reallocating the 1910-1930 MHz band to other uses. NEC appears to ignore that Section 303(y), by its express terms, only provides factors to be considered and findings to be made in order to confer flexible use authority on licensees. One of the factors, and the one relied upon most heavily by NEC, is that the allocation of flexible use authority will not cause "harmful interference" to other users of the band. This consideration, and Section 303(y) itself, cannot be understood to circumscribe the Commission's broad spectrum power under Section 303(c) to reallocate incumbents to new bands; indeed, such a restriction would give frequency-protected users permanent spectral homes. Moreover, even if NEC's revisionist reading of Section 303(y) were to be correct, NEC's theory that no reallocation can occur unless it would not cause "harmful interference" is of no comfort to UPCS. UPCS systems, by regulation, must accept interference.

<sup>17</sup> *FNPRM*, at ¶ 9; Motorola Comments, at 14.

<sup>18</sup> While this band also supports amateur radio traffic, DCT notes that ARRL -- the association for the amateur radio industry -- reiterates that amateur radio and UPCS can coexist in this band. ARRL Comments, at 4-6. While ARRL does not specifically endorse the use of the band for isochronous UPCS devices, ARRL states that only certain operating limitations shared by both asynchronous and isochronous UPCS devices are needed to avoid adverse interaction

In addition, while no one has convincingly demonstrated a need for additional spectrum for isochronous UPCS operations, if this need should ever arise, DCT supports access to the adjacent 2385-2390 MHz band. As stated by Motorola, no one has expressed an interest in this band for commercial services,<sup>19</sup> but it would be a most efficient expansion band for 2390-2400 MHz UPCS because it borders that band and its future as a piece of spectrum subject to development apart from other spectrum is bleak.<sup>20</sup>

Finally, to further ease the 1920-1930 MHz band UPCS transition impact, DCT's would support a 5-year depreciation period during which UPCS devices could continue to operate in the 1920-1930 MHz band, even though they may cause interference to MDS uses of that band.<sup>21</sup>

DCT acknowledges that the magnitude of dislocations caused by requiring the relocation of RF operations is a factor that should be taken into account, and considered with other relevant factors, in deciding who must go where to make room for a new or expanded radio service. But it is only one factor of many and, in this case, the UPCS interests have not shown that there are many operations that will be significantly adversely affected by the reallocation DCT supports, especially given the generous transition period DCT recommends. We know that the 1910-1920 MHz band lies fallow, and that there is not much development in the 1920-1930 MHz band given the 6 years manufacturers have had to market products in this band.

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with Amateur stations in the 2390-2400 MHz band. ARRL Comments, at 6-7, n.6. As explained below in Section IV, these operating restraints cannot be met by MDS, thus rendering the 2390-2400 MHz band not only too small for MDS Channel 1 and 2 relocation, but technically unsuitable for MDS.

<sup>19</sup> Motorola Comments, at 13.

<sup>20</sup> DCT doubts that any one would find a potentially business-sustaining use for such a small segment of bandwidth, or that equipment manufacturers would risk an investment in equipment without a demonstrated, viable market for products using this small bandwidth. But, if coupled to the 2390-2400 MHz band, it becomes part of a 15 MHz band that could support existing and expanded uses of isochronous UPCS devices.

<sup>21</sup> The benefits and congruence with UPCS uses of this depreciation period are discussed in the comments to the *FNPRM* filed on October 22, 2001 by the Ad Hoc MDS Alliance.

(b) MDS Can Operate in the 1910-1930 MHz Band Without  
Causing Harmful Interference to Adjacent Band Operations

In recommending the 1910-1930 MHz band for MDS Channel 1 and 2 relocation, DCT is aware that the band supplies a small amount of extra bandwidth that could be used to control interference into PCS mobile transmitter reception below 1910 MHz and into PCS base station transmitter reception above 1930 MHz. Cingular, in essence, supports our observation in stating that high power operations can coexist with adjacent band PCS operations if 5 MHz guardbands are used.<sup>22</sup>

Motorola, however, asserts that interference from MDS to adjacent band broadband PCS operations will be unmanageably high. In making this claim, Motorola relies upon what it admits is an extrapolation of a "preliminary" analysis not of MDS operations in the 1910-1930 MHz band, but of MDS operations in the 2150-2162 MHz band indicating that MDS CPE would interfere with both adjacent band PCS base stations and subscriber units.<sup>23</sup> While time constraints have not permitted DCT to commission a thorough engineering analysis of Motorola's extrapolation, DCT observes that Motorola studied a smaller MDS band and assumed MDS operations at powers of 2,000 watts. While MDS stations can operate at such high powers, they rarely do so and only when used for multichannel video delivery service. DCT believes that a proper engineering analysis must consider the 1910-1930 MHz band, must consider its capability to provide guard zones between MDS and broadband PCS, and must consider the more realistic scenario of the use of these MDS channels as return paths. Our engineers inform us that they are confident that MDS operations in the 1910-1930 MHz band can be engineered to avoid interference to broadband PCS operations in upper and lower adjacent bands. They note that the adjacent bands are occupied by commercial PCS operators, who use good RF filtering at

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<sup>22</sup> Cingular Comments, at 12-13.

base stations and sophisticated subscriber devices that have sufficient filtering to allow for an efficient control of adjacent band interference. Indeed, PCS operators must operate with adjacent spectrum neighbors who themselves are PCS operators, with large towers, high power transmitters and numerous base stations using different standards.

As for cochannel interference from MDS to 1920-1930 MHz UPCS in a transitional band-sharing scenario pending the depreciation and relocation of UPCS devices, our engineers also believe that a solution can be had to this problem of interference. Unlike many RF devices, the vast majority of UPCS devices are in-building and intra-building applications. As such, these devices are "pinpointed" and thus are not apt to wander nomadically into the path of MDS transmitters. In-building antennas are designed to cover very specific areas, and virtually all of them use diversity antennas to increase their own performance inside buildings to combat fading and thus to provide a better average link margin within its own system. These devices are also greatly shielded by the building itself. According to our engineers, path loss attenuation through typical building walls is on the order of 20 to 30 dB at 2 GHz. Intra-building and on-campus outdoor antennas are designed and installed with very narrow beamwidths. These highly directional fixed-mount antennas could very likely discriminate against MDS interference. A solution is also aided by the fact that there are very few of these cordless phone systems in use, thus aiding spectrum sharing during this transitional period. Considering all of these factors, our engineers predict that the likelihood of interference is greatly mitigated and that there would likely be only a few isolated cases where any noticeable degradation would result during the transition period.

#### IV. THE 2385-2400 MHZ BAND CANNOT BE CONSIDERED AS AN MDS CHANNEL 1 AND 2 RELOCATION BAND

Some commenters suggest the relocation of MDS Channels 1 and 2 to the 2385-2400 MHz band.<sup>24</sup> DCT firmly disagrees with this suggestion.

First, MDS high power transmitters would interfere with cordless phones, wireless LANs and personal access networks operating above 2400 MHz. These devices are designed without enough filtering to prevent comparatively high power MDS transmitters from saturating the front ends of these devices, rendering them useless. Such a result would create a major controversy with consumers, consumer groups and educators,<sup>25</sup> who cannot be expected to understand the fine nuances of frequency allocation decisions. The public relations nightmare would be massive, because these devices are consumer products and there are millions of them in use. If MDS were to have just 15 MHz between 2385 and 2400 MHz to accommodate current operations, Ad Hoc doubts that there would be room in the 2385-2400 MHz band both for MDS's current operating bandwidth and for a guardband sufficient in size to protect cordless phone, wireless LAN and personal access network reception. In short, this band is too small to accommodate displaced MDS Channels 1 and 2.

Second, the remaining portion of the band between 2390 and 2400 MHz is allocated to the Amateur Radio Service on a primary basis and cannot be shared with MDS without mutually-destructive interference. ARRL, the amateur radio association, explains that UPCS and the Amateur Radio Service are able to share this band because of the in-building nature of UPCS and the very low powers at which it operates. As required by the UPCS Rules, UPCS devices cannot

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<sup>24</sup> Motorola Comments, at 13-14; Comments of Verison Wireless to *FNPRM*, at 9 (filed Oct. 22, 2001); Comments of Ericsson to *FNPRM*, at 10-11 (filed Oct. 22, 2001). Ericsson also suggests the alternatives of MSS spectrum below 2025 MHz and the 700 MHz band for MDS relocation spectrum.

<sup>25</sup> Wireless LANs are common to college campuses.



exceed a spectral density of only 3 milliwatts in any 3 kHz bandwidth,<sup>26</sup> and ARRL strenuously opposes any relaxation of that density limitation.<sup>27</sup> Accepting ARRL's comments, MDS cannot share spectrum with Amateur radio because even the lowest power MDS transmitters, operating as return paths from subscriber premises, vastly exceed that power density. Viewed from the perspective of MDS as the interference victim, ARRL's and Cingular's comments indicate that MDS reception would also suffer in that band because amateur stations are itinerant and operate at relatively high power levels.<sup>28</sup> Notably, MDS does not now share spectrum with amateur radios, and should not have to suffer this additional, and probably unsolvable, coordination problem along with a relocation.

Third, a relocation of MDS to this band would be a relocation to a higher frequency, resulting in inferior propagation characteristics and increasing power requirements while making the transition to self-installed CPE more problematic.

Fourth, even assuming that the 2385-2400 MHz band has sufficient size to accommodate MDS Channels 1 and 2 (which it does not), one-third of this band between 2385 and 2390 MHz is encumbered by Governmental users until 2005, as well as other incompatible uses of this spectrum by its current non-Governmental users.<sup>29</sup> This is simply too long for MDS to wait for cleared replacement spectrum.

In short, no portion of the 2385-2400 MHz band offers an acceptable home for displaced MDS operations.

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<sup>26</sup> ARRL Comments, at 6.

<sup>27</sup> ARRL Comments, at 12.

<sup>28</sup> ARRL Comments, at 9; Cingular Comments, 14.

<sup>29</sup> See Spectrum Chart contained with Rule 2.106.

V. A RELOCATION OF MDS CHANNELS 1 AND 2 TO IDENTIFIED SPECTRUM OTHER THAN THAT AT 1910-1930 MHZ OR AT 1990-2010 MHZ WILL CAUSE SEVERE ADVERSE FINANCIAL CONSEQUENCES TO MDS, INCLUDING THE POSSIBILITY OF THE LOSS OF THE ABILITY TO PROVIDE HIGH SPEED INTERNET-ACCESS AND OTHER SERVICES TO THE PUBLIC

In their comments, Sprint, WorldCom and the Wireless Communications Association International exhort the Commission not to relocate MDS Channels 1 and 2 because of the costs of relocation and the potential adverse effect on providing the fixed broadband services that are so desperately needed, particularly in rural areas. DCT also strongly favors remaining in its spectral home MDS Channels 1 and 2 have had since the 1970s. That said, we have still commented on relocation alternatives in the event that the momentum to take our band for 3G is overwhelming.

Critical to an MDS Channel 1 and 2 relocation is that they move only to a lower frequency band. Indeed, the lower the better because lower bands offer less signal absorption which is an especially acute problem for broadband applications. Lower bands also encourage equipment manufacturers to design and produce the high quality and innovative equipment that will be needed to propel MDS's fixed broadband services, because equipment design is less expensive and the business model improves. Finally lower bands promote the development and availability of subscriber units that can be installed without the aid of professional installation, and without the corresponding cost of the truck-roll, installation personnel salaries and installation equipment required for professional installation. Self-installation is viewed by many as the key to the future of broadband fixed wireless services.<sup>30</sup>

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<sup>30</sup> Both Sprint and WorldCom have announced that they will retard MDS fixed broadband installation efforts awaiting the availability of self-installed CPE.

The 1910-1930 and 1990-2015 MHz bands are the only bands that have been identified in this proceeding that promote those business goals and avoid the pitfalls of an increase in the frequencies assigned to MDS Channels 1 and 2.

VI. REGARDLESS OF THEIR FREQUENCY BAND, MDS CHANNELS 1 AND 2 SHOULD RECEIVE THE SAME FLEXIBLE USE AUTHORITY NOW ENJOYED BY THEIR COUNTERPARTS AT 2500-2690 MHZ

DCT's comments to the *Advanced Services NPRM* presented the case for according MDS Channel 1 and 2 operations the same flexibility of use that the Commission accorded to MDS and ITFS channels operating in the 2500-2690 MHz band. We have seen no comments that present a counter-argument to that proposal. Rather, the only comments to address it enthusiastically support this proposal to harmonize the use-latitude given to MDS Channels 1 and 2 with the use-latitude given to the channels between 2500-2690 MHz that are used cooperatively with MDS Channels 1 and 2 to offer a single service.<sup>31</sup>

The absence of resistance to this proposal speaks to the compelling logic of the *Policy Statement* on spectrum allocations<sup>32</sup> generally, and of according flexible use to the entire

<sup>31</sup> Comments of WorldCom, at 11; Comments of WCAI, at 14.

<sup>32</sup> *Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium*, FCC 99-354 (rel. Nov. 22, 1999). The overall goal of the Commission's wireless spectrum allocation policy is efficient use of spectrum. Harmonizing spectrum use rules for like services is one of the key identified means for achieving this end. To quote the *Policy Statement*:

In the majority of cases, efficient spectrum markets will lead to use of spectrum for the highest value end use. Flexible allocations may result in more efficient spectrum markets. Flexibility can be permitted through the use of relaxed service rules, which would allow licensees greater freedom in determining the specific services to be offered. Another way to allow flexibility in use of the spectrum is to allow licensees to negotiate among themselves arrangements for avoiding interference rather than apply mandatory technical rules to control interference. *A third possibility is to harmonize the rules for like services.*

*Id.* at ¶ 9 (emphasis supplied).

MDS/ITFS band specifically. While the case for according flexible use authority to MDS and ITFS operating in the 2500-2690 MHz band is compelling, it is perhaps more critical to MDS/ITFS-based fixed broadband services to accord this authority to MDS Channels 1 and 2. MDS Channels 1 and 2 are the primary return path frequencies used for MDS/ITFS-based fixed broadband services. If they have flexible use authority, the development of "self-installed" CPE will be promoted.

## VII. CONCLUSION

For the reasons stated above, while DCT strongly oppose a relocation of MDS Channels 1 and 2, if the Commission decides to take such action to accommodate advanced wireless services, it should relocate those MDS channels to either the 1910-1930 MHz band or the 1990-2005 MHz band on an exclusive basis. Other displacement bands identified in this proceeding are not suitable, and could destroy the potential of MDS Channels 1 and 2. In any event, MDS Channels 1 and 2 should receive the same flexible use authority now enjoyed by their counterpart ITFS/MDS channels in the 2500-2690 MHz band

Respectfully submitted,

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